Space Weather Forecast

Issued on Sunday, 29 May 2022 at 01:24 Local

This forecast provides a four day assessment of space weather events. The probabilities stated below are for reaching or exceeding the given levels. For more information about space weather impacts please see the Met Office Space Weather Scales https://www.metoffice.gov.uk/weather/learn-about/space-weather/uk-scales

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Space Weather Forecast Headline: Slight chance of and isolated moderate-class flare. Slight chance of G1/Minor Storm interval.

Analysis of Space Weather Activity over past 24 hours

Solar Activity: Solar activity has been Low over the past 24 hours, with occasional low-level common-class X-ray flares. There are currently five visible sunspot regions on the Earth-facing side, all of which are small and simple. AR3017 is no longer visible on the western limb, but it is still possible to see flares from this region. No Earth directed coronal mass ejections have been observed in coronagraph imagery in the last 24 hours, although there is a south directed coronal mass ejection that left the Sun on 28th May, this is expected to miss, but there is a slight chance of a glancing blow on 1st June.

Solar Wind / Geomagnetic Activity: The solar wind, indicated the presence of the high speed stream from coronal holes 84 or 85. Wind speeds were slightly elevated or elevated throughout. The interplanetary magnetic field started moderate before becoming largely weak after 28/0520 UTC. The north-south component ranged between weakly positive and moderately negative, gradually becoming weakly northward directed through the second half of the day. Geomagnetic activity started with 3 G1/Minor Storm intervals before gradually easing back to Quiet.

Energetic Particles / Solar Radiation: No solar radiation storms were observed.

Four-Day Space Weather Forecast Summary

Solar Activity: Solar activity is now expected to be mainly Low, with AR3017 rotating off the western limb. There is a very slight chance of M-class flares through this period. There is one bright flux region appearing on STEREO EUV imagery over the eastern limb, but this will take several days to appear on the visible disk.

Solar Wind / Geomagnetic Activity: No Earth directed coronal mass ejections feature in the forecast, though there is a south directed coronal mass ejection that left the Sun on 28th May, this is expected to miss, but there is a slight chance of a glancing blow on 1st June. The Earth is currently experiencing the fast wind from one or both CH84/- or CH85/-. Elevated winds speeds on day 1 (29th) will likely ease to slightly elevated by day 2 (30th), probably becoming slow ambient by day 3 (31st).

Geomagnetic activity is expected to be Quiet to Active with a slight chance of G1/Minor Storm intervals on day 1 (29th). Geomagnetic activity should become mostly Quiet by day 2 (30th), with a marginal chance of increased activity on day 4 (01 June).

Energetic Particles / Solar Radiation: Solar radiation storms are unlikely.

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Geomagnetic Storms:

Geo-Magnetic Storm Probability (Exceedance)	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Minor or Moderate	G1 to G2	No	15	5	1	5
Strong	G3	No	1	1	1	1
Severe	G4	No	1	1	1	1
Extreme	G5	No	1	1	1	1

Radio Blackouts - X Ray Flares:

X Ray Flares Probability	Level	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	R1-R2 M Class	No	5	3	3	3
Very Active	R3 to R5 X	No	1	1	1	1

Solar Radiation Storms - (High Energy Protons):

Radiation Storms Probability (Exceedance)	Level (cm^{-2} sr^{-1} s^{-1})	Past 24 Hours (Yes/No)	Day 1 (00-24 UTC) (%)	Day 2 (00-24 UTC) (%)	Day 3 (00-24 UTC) (%)	Day 4 (00-24 UTC) (%)
Active	≥ S1	No	2	1	1	1
Very Active	≥ S3 *	No	1	1	1	1

* S3 ≥ 10 MeV ≥ 1000 pfu and / or ≥ 50 MeV ≥ 10 pfu. (pfu = $cm^{-2}sr^{-1}s^{-1}$)

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